

***Listing of the Claims***

This listing of claims will replace all prior versions, and listings, of claims in the application.

1-20. (*Canceled*)

21. (*Previously Presented*) A system for producing a pulse code modulation (PCM) signal, comprising:

a first filter configured to produce an in-phase signal  $I(n)$  from a secondary audio program (SAP) signal;

a second filter configured to produce a quadrature-phase signal  $Q(n)$  from the in-phase signal  $I(n)$ ;

a FM demodulator configured to produce a FM demodulated signal substantially equal to  $Z(n)/X(n)$ , wherein  $Z(n)$  and  $X(n)$  are functions of  $I(n)$  and  $Q(n)$ , the FM demodulator including a denominator device that estimates a value  $1/X(n)$  based at least in part on a prior estimated value of  $1/X(n)$  and a transition speed of  $X(n)$ ; and

a third filter configured to produce the PCM signal from the FM demodulated signal.

22. (*Previously Presented*) The system of claim 21, wherein  $Z(n)$  is substantially equal to  $[I(n)Q'(n) - I'(n)Q(n)]$  and  $X(n)$  is substantially equal to  $[I^2(n) + Q^2(n)]$ .

23. *(Original)* The system of claim 21, wherein the SAP signal is a constant magnitude signal, a sine wave, or a cosine wave.
24. *(Original)* The system of claim 21, wherein the first filter is a band pass filter.
25. *(Original)* The system of claim 21, wherein the second filter is a Hilbert filter.
- 26-31. *(Canceled)*
32. *(Previously Presented)* The system of claim 21, wherein the denominator device estimates the value  $1/X(n)$  based at least in part on the prior estimated value of  $1/X(n)$  plus an error value.
33. *(Previously Presented)* The system of claim 32, wherein the error value is substantially equal to  $[1-X(n)/X(n-1)]$ .
34. *(Previously Presented)* The system of claim 33, wherein the error value is scaled by a value of a scaling coefficient before being added to the prior estimated value of  $1/X(n)$ .
35. *(Previously Presented)* The system of claim 34, wherein the value of the scaling coefficient is based on the transition speed of  $X(n)$ .